DIVISION OF ENVIRONMENT
QUALITY MANAGEMENT PLAN

PART II:

BUREAU OF ENVIRONMENTAL REMEDIATION
QUALITY ASSURANCE MANAGEMENT PLAN

Revision 1
December 9, 2002

Kansas Department of Health and Environment
Division of Environment
Bureau of Environmental Remediation
Forbes Field, Building 740
Topeka, Kansas 66620

Concurrences and Approvals

Concurrences, KDHE Bureau of Environmental Remediation

Name: Leo Henning
Title: Section Chief, Assessment and Restoration

Signature_____ Date_____

Name: Rick Bean
Title: Section Chief, Remedial Section

Signature_____ Date_____

Name: Tom Winn
Title: Section Chief, Storage Tank Section

Signature_____ Date_____

Name: Murray Balk
Title: Section Chief, Surface Mining Section

Signature_____ Date_____

Name: Bill Morris
Title: Bureau QA Representative, Bureau of Environmental Remediation

Signature_____ Date_____

Name: Gary Blackburn
Title: Director, Bureau of Environmental Remediation

Signature_____ Date_____

Approvals, KDHE, Division of Environment

Name: Dennis Degner
Title: Quality Assurance Officer, Division of Environment

Signature_____ Date_____

Name: Ron Hammerschmidt
Title: Director, Division of Environment

Signature_____ Date_____

TABLE OF CONTENTS

TABLE OF CONTENTS con't

Section 1

INTRODUCTION

1.1 Purpose and Scope of Plan

Within the Kansas Department of Health and Environment (KDHE) organization, the Bureau of Environmental Remediation (BER) has a major role in numerous environmental investigation, monitoring and remedial activities. The bureau provides technical assistance to industry, the public and other governmental entities; conducts special studies to assess contamination; conducts inspections and investigations to support enforcement actions and decisions; collects samples of numerous environmental media; reviews, evaluates and interprets data; responds to environmental emergencies; manages contracts relating to field and laboratory operations; and participates in a variety of other environmental data collection activities. To meet the objectives of the divisional quality assurance (QA) program, there is a need to formalize the policies and procedures in the bureau.

This part of the Quality Management Plan (QMP) addresses the organization and general operations of BER and describes the policies, procedures and responsibilities that have been incorporated into the internal operations of the bureau as the mechanism for assuring the quality of the environmental data generated. Detailed descriptions of the functions of the five sections within the bureau are included in Part III of the QMP. Standard operating procedures (SOPs) utilized by the bureau and sections are included as appendices to Part III.

1.2 Plan Revisions

To be effective and useable, this document must be maintained in an up-to-date condition. This is usually accomplished by reviewing the contents on an annual basis in conjunction with updating Part III. These annual revisions are mostly minor in nature since they are designed to reflect changes in organizational structure and keep terminology and other issues current. Minor revisions require approval only by the bureau director and the bureau QA representative. Major revisions require approval of the above and the DOE QA officer and the Division Director, pursuant to QMP Part I, section 11.1.

Major revisions which substantially change the contents of the QMP in terms of QA policies, structure and procedures may require that the overall plan be rewritten, and resubmitted for formal approval. A determination to rewrite the plan shall be made during the annual review process. In addition, major revision to the plan may be warranted due to significant changes in agency requirements.

Section 2

MISSION, GOALS AND ORGANIZATION

2.1 Historical Overview

Established in 1986, BER coordinates the Division of Environment's investigatory and remedial activities at sites in Kansas where contamination is suspected or has been detected, and provides a single point of contact to respond to questions relating to these sites.

The bureau also organizes and conducts specific activities under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Reauthorization Act of 1986 (SARA) and the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The federal program established by CERCLA and SARA, referred to as Superfund, is administered by the United States Environmental Protection Agency (EPA) and provides money to the State for the investigation and cleanup of sites meeting the program's requirements. SMCRA is federally administered by the Office of Suface Mining (OSM) which provides the state funds to inspect and enforce regulations on active coal mines and to abate hazards associated with past coal mining activities.

2.2 Mission

The overall mission of BER is to identify, investigate and take appropriate remedial actions when pollution endangers the natural resources and environment of Kansas, so that the pollution from contaminants can be mitigated, damage to natural resources minimized, and the threat to public health eliminated by implementation of appropriate corrective actions. To accomplish this mission, BER endeavors to:

(1) manage the landfill program to insure that contaminants present at closed landfills are contained on and under the sites and off-site contamination is appropriately monitored or remediated;

(2) manage the spill program by responding to releases of substances, materials, or wastes in such a manner as to prevent, contain and cleanup released material to minimize damages to the waters and soils of the state;

(3) manage underground and above-ground storage tank programs to prevent or eliminate damages to health and environment by enforcement of laws and regulations designed to reduce releases of petroleum products;

(4) manage the Superfund program including pre-remedial, remedial and removal to identify, investigate and remediate the pollution of the environment or damage to natural resources so pollution from hazardous substances may be mitigated, damage may be minimized, and public health and the environment may be protected through appropriate corrective actions;

(5) manage the cooperative, State Water Plan, and voluntary cleanup programs to oversee contractors, industry, the public, and other governmental entities conducting investigations and implementing cleanups of pollution in Kansas to ensure all types of contamination are mitigated and the public health and environment are protected; and

(6) manage surface mining programs to protect the public health, safety, general welfare, and property from the adverse impacts of active coal mining and the extreme danger and/or adverse effects of past coal mining practices, and restore land and water resources and the environment previously degraded as a result of the adverse effects of past coal mining practices.

(7) manage the Drycleaner Environmental Response Act and associated trust fund to prevent or eliminate damages to public health or the environment by implementation of waste reduction and handling laws, plus the remediation of contaminated soils and groundwater at drycleaning sites.

(8) manage the Chemical Control Act program to protect the public and the environment from hazardous materials discovered or released at clandestine laboratories, and provide education to the general public, law enforcement, and first responders of the hazards related to clandestine laboratories.

In carrying out its mission, BER performs the following specific activities:

* compliance inspections of facilities regulated under the underground and above-ground storage tank programs;

* rapid responses to environmental emergency situations;

* provision of oversight and guidance in completing emergency and time-critical contaminant removal actions;

* coordination and oversight of monitoring activities performed by industry and other governmental entities;

* special studies to assess soil and water contaminant levels;

* assessment and investigation of reports and complaints concerning environmental contamination;

* assessment of immediate and long-term health and environmental risks associated with soil and water contamination;

* assessment of the effectiveness of onsite remedial systems;

* provision of oversight and technical assistance for remedial designs and actions;

* inspection of closed landfills, approval of closure plans, and oversight of closure operations;

* technical assistance and oversight of assessments and remediation at federal facilities; and

* permit and inspect coal mines for compliance with regulations plus identify and remediate hazards associated with past coal mining activities.

2.3 Goals and Objectives

The overall goal of BER is to provide responsive, cost-effective and high quality oversight and guidance to industry, the public and other governmental entities to ensure that contamination is addressed to minimize the threat to public health and the environment. The bureau's expectations are to represent the highest degree of professionalism, public accountability, efficiency and regulatory consistency in protecting the public health and environment. In order to achieve these objectives and attain the above-stated goal, BER endeavors to:

(1) maintain equipment/facilities and the knowledge, skills and training of employees at state-of-the-art levels in those areas that are consistent with the current and future needs of the bureau;

(2) maintain a level of consistency in investigative and remedial approaches for industry, the public, and other governmental entities;

(3) develop more effective procedures for managing contracts and coordinating work done by contractors with that done by the bureau;

(4) improve public relations by developing standard approaches for implementing public information programs, and increase public education and awareness concerning contamination;

(5) maximize the efficient use of bureau resources in completing priority work;

(6) maintain a motivated, highly trained and productive work force; and

(7) maintain high standards of quality and professionalism for all BER products.

2.4 Organization and Functions

The bureau is organized into four sections: Assessment and Restoration Section, Storage Tank Section, Remedial Section and the Surface Mining Section. An overall organizational chart of the bureau is included in the Organizational charts in Exhibit 1. The function of the Technical Services Section was moved under the Administrative Unit of the Bureau.

The bureau director is responsible for the overall operation of BER and is supported by an administrative staff consisting of one secretary, three environmental scientists, one environmental engineer, one engineering associate and two research analysts. The specific responsibilities of each of the four sections are described in the subsequent paragraphs.

2.4.1 Assessment and Restoration Section

The section consists of three units and a staff of 21 full-time equivalents (FTE's). The three units are called the Landfill / Drycleaning Unit, the Response Unit, and the Superfund Unit. The section is responsible for the implementation of: the long-term maintenance and remediation of closed sanitary landfills and city dumps, and corrective actions at operating sanitary landfills; remedial actions at clandestine laboratories and general education concerning the hazards of clandestine laboratories; the spill response program and maintenance of the spill database; dry-cleaning environmental response act which includes corrective actions at contaminated dry cleaning facilities; the technical assistance program for federal lead Superfund sites; the technical assistance program for federal facilities; and various other small remedial programs.

The Landfill/Drycleaning Unit was originally created in 1993 to administer the provisions of the Solid Waste Management Act for those owners/operators of sanitary landfills who elected to cease operations rather than operate under the new federal Subtitle D requirements. The Landfill/Drycleaning Unit implements the landfill remediation program and the dry cleaner program.

The landfill program requires permit holders to perform long-term monitoring and maintenance of closed landfills and remedial actions, if needed, for those sites from which groundwater contamination is moving off site. The unit's objectives are to: (1) contain the buried wastes and any contaminated groundwater on site, so that drinking water supplies will not become impacted; (2) prevent nuisance odors and waste-generated methane gas from becoming problems off site; and (3) provide for proper grading, cover, leachate control, and seeding of native grasses so as to maintain the integrity of the landfill cap.

The dry cleaner program was established to protect the environment from releases which have occurred at dry cleaning facilities. A dry cleaning trust fund has been established to pay for the costs associated with these corrective actions. The program has requirements for dry cleaners to handle solvents and hazardous wastes in a manner to prevent further damage to the environment. Examples of these requirements are secondary containment for the dry cleaning machines and hazardous waste storage containers, direct closed-loop delivery systems for the transfer of new solvent to the dry-cleaning machines, and a ban on the disposal of separator water into the public sanitary sewer system. Also, the dry-cleaning facilities must register with KDHE each calendar year.

The Response Unit is responsible for the implementation of the Clandestine Laboratory Program and the Spill Response Program. The clandestine laboratory program was established to protect human health and the environment by investigating and performing remedial activities at clandestine laboratories. The program responds and disposes of hazardous materials seized from clandestine laboratories. The program

is tasked to provide education to the general public, law enforcement personnel, and first responders. The program has also initiated a voluntary program for retailers to limit the accessibility of some of the precursor drugs or materials to the general public.

The spill response program is designed to protect the environment from gross contamination of soils and waters of the state resulting from the accidental releases which may adversely impact the environment. The objective of the program is to cause timely containment and removal of the substances or neutralization of the substances to minimize the negative impact to the environment.

The Superfund Unit implements the technical assistance programs for the federal lead superfund sites and at federal facilities. The technical assistance is achieved through the Management Assistance Cooperative Agreement (MACA) grant with the US Environmental Protection Agency and the Defense State Memorandum of Agreement(DSMOA) grant with the US military services.

The Superfund Unit protects human health and the environment by providing technical assistance to EPA for some of the most contaminated sites in Kansas. The oversight is funded through the MACA grant. The grant provides funds for the unit to review documents and provide input for the work conducted at federal lead superfund sites. The unit provides some oversight at these sites and works with EPA to insure all the requirements of the state are incorporated into the final remedy.

The Superfund Unit protects human health and the environment by providing technical assistance to the Corp. of Engineers and the military services for some of the most contaminated sites in Kansas. The oversight is funded through the DSMOA grant. The grant provides funds for the unit to review documents and provide input for the work conducted at contaminated federal facilities. The unit provides some oversight at these sites and works with the military services to insure all the requirements of the state are incorporated into the final remedy.

2.4.2 Remedial Section

The Remedial Section consists of four units and a staff of 35 full-time equivalents (FTEs) and 3 contract geologists/scientists. The four units are called the State Remedial Unit, the State Voluntary Cleanup, State Orphan Sites Unit and the Site Assessment Unit. The section is responsible for the implementation of the following programs: the State-lead Superfund program, State Cooperative program, Enforcement/Negotiation program, State Water Plan program, Voluntary Cleanup and Property Redevelopment program, pre-NPL program, Brownfields program and the Agricultural and Specialty Chemical program. The primary goal of the section is to identify, assess, investigate, remediate (as needed) and monitor contamination of the environment or damage to natural resources across the state so contamination from hazardous substances may be mitigated, damage may be minimized, and public health and the environment may be protected through remedial measures. The responsibility of the these units within the section are further defined:

The State Remedial Unit was established in 1991 to manage state lead contamination sites across the state. To accomplish this objective the unit implements the State Cooperative program, the State-lead Superfund program, the Enforcement/Negotiation program and has taken the lead on several RCRA corrective action sites. This unit is designed to handle high priority state lead sites. through a process that is similar to the federal National Contingency Plan (NCP). The management process can either be cooperative between the responsible party and the agency or enforcement-based through the issuance of administrative orders.

The unit currently has 10 staff that are responsible for managing over 200 high priority sites. The unit protects public health and the environment by providing technical oversight and direct management of the highest priority sites in Kansas.

The Voluntary Cleanup Unit is responsible for the management of voluntary cleanup properties across the state. The Voluntary Cleanup and Property Redevelopment program currently has 8 staff responsible for managing over 160 medium to lower priority sites. The unit protects public health and the environment by providing technical oversight and direct management of contaminated sites in Kansas.

The Orphan Sites Unit was established to manage orphan sites (sites without a responsible party) and brownfields properties. The State Water Plan program currently manages 67 sites with 5 staff utilizing various contractors to perform the investigations and remediation. The program has been instrumental in providing alternate water supplies to impacted citizens of the state and providing remedial measures to mitigate emergency situations. The Brownfield Targeted Assessment program provides a mechanism to assess potentially contaminated properties owned by municipalities or not-for-profit organizations. These assessments assist these organizations evaluate site conditions prior to redevelopment of the property. Work conducted through the Brownfield program is funded through a federal grant.

The Site Assessment Unit is responsible for assessment and investigation of potentially contaminated sites in Kansas under the federal Superfund program. The unit consists of 7 staff who investigate and assess numerous complaints and contamination sites across the state. The program assesses potential contamination at sites and either: 1) refer sites to one of the various programs for further action; 2) refer sites for more work under the federal Superfund program through further assessment and scoring of the site; or 3) recommend sites for no additional action. The work accomplished by this unit is entirely funded through a federal grant.

2.4.3 Storage Tank Section

The Storage Tank Section currently consists of six units and 35 FTEs. The section is responsible for implementing the Underground Storage Tank (UST) Program, Leaking Underground Storage Tank (LUST) trust fund, Underground Petroleum Storage Tank Release Trust (UST) fund, Aboveground Petroleum Storage Tank Release Trust (AST) fund, and the Aboveground Storage Tank Registration Program.

The six units which make up the Storage Tank Section are the Investigation/LUST, Contractual Services, Remedial, Wellhead Protection, Groundwater Monitoring, and Preventative Units. The goals of the Storage Tank Section are to enforce federal and state UST statutes and regulations, prevent releases from USTs, and provide funds and oversight for corrective action where leaks do occur. In addition, funding and oversight is provided for corrective action at AST sites.

The LUST portion of the Investigation/LUST Unit receives federal funding to provide oversight of remedial activities at contaminated UST sites. Where responsible parties are unable or unwilling to provide remedial action, federal funding may be used to perform remedial action. Program data is entered onto a data base for site tracking and reporting purposes. Rapid response measures are taken by the LUST Unit to resolve emergencies associated with underground tanks. Ranking of UST and AST sites to establish priority is managed by the LUST unit.

The Investigation portion of the Investigation/LUST Unit coordinates all site investigation activities for UST and AST fund sites. Sites are investigated in order of their site ranking, with higher risk sites being first. A project manager is assigned to each site prior to the investigation being performed. The project manager prepares bid documents to describe the site conditions. Once bidding is finalized the project manager works with the consultants to complete the investigation. Based on the final report and subsequent re-ranking, the site will be either forwarded to the Remedial Unit, placed on monitoring status, or closed. The Risk Based Corrective Action component of the program has recently been implemented. This unit is also responsible for oversight and review of all related activities.

The primary goal of the Contractual Services Unit is to implement the bidding process of the UST and AST funds as required by statute. Once the technical documents are prepared, the unit obtains bids from qualified consulting firms for corrective action. Consultants who bid on the UST or AST fund projects submit information to demonstrate their qualifications and become approved for those projects they plan to bid. The unit reviews and approves proposals for the cost and scope of work. Once the work is completed, reimbursement requests are submitted for approval. Presently, reimbursement payments are issued within two weeks of receipt of the invoice.

The Remedial Unit is responsible for obtaining, reviewing, and approving remedial designs. The unit also provides oversight throughout the remedial phase of the project. Corrective action is implemented at sites determined to present a threat or potential threat to the public health or the environment. These projects require an extensive amount of oversight due to the complexity of each remedial system. Document preparation is required to obtain bids prior to implementation of each project.

The Preventative Unit receives a grant from EPA to perform activities related to preventing releases from USTs. A permitting program is used to obtain compliance with these preventative rules. To obtain a UST permit the owners must submit to KDHE proof that release detection and financial responsibility requirements have been met for their registered USTs. In addition, all firms who perform installation, upgrading, and removal of USTs must be licensed by KDHE. Applications for installation or upgrading of UST systems must be approved. Information about USTs is stored on an electronic data base. This information is used to track regulation compliance and to report program progress to EPA. This unit also registers, permits and tracks aboveground storage tanks.

The Groundwater Monitoring Unit reviews reports that present analytical data describing dissolved phase hydrocarbons in groundwater as well as a description of separate phase occurrence. The unit staff are responsible for establishing criteria for bidding groundwater monitoring scopes of work, negotiating costs for renewals and approving miscellaneous work that sites may need. The unit is also responsible for maintaining an inventory of technical supplies, providing geoprobe services to agency staff and arranging for disposal of used remedial equipment.

The Wellhead Protection Unit is responsible for obtaining bids for and managing remedial projects that involve impacted or potentially impacted sensitive receptors. Unit staff concentrate efforts to manage projects where public water supply wells have been or are in danger of being impacted. Staff are also involved with obtaining bids for and managing remedial projects where the actual or perceived risk is not a driving issue. Remedial projects managed by this unit require relatively significant amounts of management resources due to the risk that the contaminants pose as well as the complexity of the systems used to remedy the contamination.

2.4.4 Surface Mining Section

The Surface Mining Section consists of two programs and employs 14 FTEs. This section consists of the abandoned mine land (AML) program, which performs both AML and emergency program functions, and the administration and enforcement (A&E) program for the active coal mines in the state.

The purpose of the AML program is to reclaim and restore the land and water resources which have been adversely affected by past coal mining activities. The primary objective of this program is the protection of the public health, safety, general welfare, and property from the extreme danger and/or adverse effects of past coal mining practices. A secondary objective is the restoration of land and water resources and the environment previously degraded as a result of the adverse effects of past coal mining practices.

The emergency program responds to past coal mining problems that create such an extreme danger to life and/or property that abatement cannot be handled quickly enough through normal AML program practices. These events are sudden, unforeseen occurrences and are usually the result of collapsed mine roofs of abandoned underground coal mines which cause the ground surface to subside.

The A&E program regulates the active coal mines in the state. This program was established in 1969 by the Mined Land Conservation and Reclamation Act (K.S.A. 49-401 *et seq*.). The regulation of the coal mines begins with the submission of a detailed permit application. Once the permit application has been approved and a performance bond is posted the operator can begin mining according to the permit document and the performance standards in K.A.R. 47-9-1. Program staff will inspect the mine at least monthly during its entire life. The permit will remain bonded until the operator has met the revegetation standards of the regulations.

2.4.5 Administrative Services

The environmental engineer who is part of the administrative staff provides technical support and assistance to project managers within BER in evaluating and implementing safe, effective, and cost efficient remedial measures for releases of contaminants to the environment. An engineering associate position is available to assist with the engineering review provided by the administrative staff. At this time the Environmental Scientist III positions perform a wide variety of functions, including, oversight of the Research Analysts, Quality Assurance representative for the bureau, Enforcement Officer for the bureau, Vapor Intrusion / Indoor Air Quality contact and other duties/functions assigned by the Bureau Manager.

Section 3

QUALITY ASSURANCE POLICY STATEMENT

The bureau relies on environmental monitoring data to support a multitude of project management, regulatory and administrative decisions. Accordingly, efforts to document and improve the quality of monitoring data rank among the most important functions of staff. It is the policy of BER that all activities involving environmental data collection will be planned and carried out in conformance with the policies and procedures in Part I of the QMP; i.e., all data generated by BER will have known and documented quality. All monitoring activities performed within the bureau (intramural activities) or conducted by independent contractors or consultants (extramural activities) are expected to comply fully with the following internal policies:

(1) Quality assurance and quality control (QC) shall be identifiable aspects of all monitoring programs and provided sufficient resources for continued implement-ation; QA and QC measures shall be integrated into environmental monitoring programs in the most cost-effective manner possible without compromising data quality.

(2) All data collection activities shall be designed to provide a cost-effective balance between data quality and data production.

(3) The objectives of each environmental monitoring project shall be determined prior to implementation of data collection activities. This determination shall be accomplished during the planning stage of the project so that appropriate procedures will be incorporated into the design of the project and the resulting data will have a reasonable probability of meeting the stated objectives and data quality expectations. Where applicable tolerance levels will be established for the data. All project-specific QA management plans shall be approved prior to implementation of field activities and/or data collection at identified projects.

(4) Sample collection and analysis activities and data management activities shall be subjected to periodic evaluation by supervisory personnel and outside auditors to identify and correct deficiencies and enhance the overall credibility of the bureau's environmental monitoring programs.

(5) All data collection activities shall be accomplished and documented in accordance with Part I of the QMP, this document, and applicable program-level QA plans and SOPs.

(6) All routinely used procedures shall be documented as SOPs and approved by the appropriate section chiefs and the bureau director and division director.

(7) This bureau QA management plan (Part II of QMP) and all associated program-level QA management plans and SOPs shall be maintained as part of the divisional QMP. The documents required under this plan shall be reviewed every year.

(8) An adequate internal review system shall be implemented to ensure that QA/QC requirements are complied with uniformly within the bureau.

(9) Deficiencies identified by review (whether performed by internal or external entities) shall be corrected as expeditiously as possible.

(10) Training for QA/QC shall be integrated into all monitoring programs; specific training needs shall be identified and provided for within budgetary constraints.

(11) Measures shall be instituted as outlined in the QAPP documents within each environmental monitoring program to ensure that the quality of obtained environmental data is accurately and permanently documented.

Section 4

RESPONSIBILITIES

The general responsibilities of managerial staff and the bureau quality assurance officer are defined in the following subsections. The operations and success of BER are dependent on the leadership provided by these staff.

4.1 Bureau Director

This employee is responsible for organizing and directing the operations of BER which includes the development, revision and implementation of the bureau QA management plans (Part II of QMP). With the assistance of the bureau QA representative and section chiefs, they ensure that the requirements of these management plans are fulfilled in the most cost effective manner possible without hindering attainment of the stated QA objectives. Bureau directors prioritize the training and continuing educational needs of staff and develop funding proposals to accommodate these needs, as necessary.

4.2 Section Chiefs

The section chiefs generally are responsible for more than one environmental monitoring program and may supervise other "front line" supervisors such as program managers or unit leaders. The implementation of uniform policies and procedures is the responsibility of the section chiefs within the bureau. Section chiefs are responsible for planning, organizing, supervising and directing the statewide activities of a specific environmental program. Specifically, the section chiefs are responsible for:

(1) developing and implementing technical policies and procedures and coordinating program activities toward accomplishing the overall objectives and goals of the bureau;

(2) evaluating and recommending programs and budget requirements to execute assigned responsibilities;

(3) proposing and developing rules, regulations and amendments necessary to carry out program activities and functions;

(4) with the assistance of the bureau QC representative, ensuring that adequate QC provisions are incorporated into all data collection activities in order to be able to assess and document the quality of the data generated;

(5) ensuring that all data collection activities performed by staff are accomplished in the most cost-effective manner possible without sacrificing data quality;

(6) ensuring that adequate program-level QA management plans and SOPs are prepared and reviewed annually;

(7) ensuring that project managers or leaders, field personnel, analysts, and other staff participating in the collection of samples or generation of data adhere to established policies and procedures (i.e., approved SOPs, training requirements and others, as appropriate);

(8) ensuring that project managers or leaders maintain consistent procedures, guidelines and directives to industry, the public and other governmental entities;

(9) ensuring that all work performed under contract for the bureau is completed in conformance with the divisional and bureau QMP requirements; and

(10) providing adequate opportunities for employees to meet training needs within budgetary constraints.

4.3 Unit Leaders

Unit leaders (program managers) are responsible for ensuring that the requirements of the program-level QA management plans and SOPs are implemented in a consistent, timely and reliable manner. Evaluate the processes used to accomplish the duties of their specific program and help identify the need for new QAQC policies to improve the overall program. Working with the section chiefs, the unit leaders strive to improve the precision, accuracy and reliability of all environmental monitoring data through the effective allocation of staff and resources. Unit leaders also identify QAQC training needs of staff.

4.4 Staff

Staff directly involved in the collection and analysis of environmental monitoring data must ensure proper implementation of the bureau-level QA management plan. The precision, accuracy and reliability of environmental monitoring data is a direct function of the willingness of staff to abide by the SOPs and to participate in the ongoing review and revision of the bureau and program QA documentation. Because they carry out the provisions of these plans and procedures on a routine basis, non-supervisory staff often develop a keen understanding of the technical strengths and weaknesses of the division's environmental monitoring programs. Program managers and administrative staff are expected to solicit input from these employees when developing new or revised QA management plans or SOPs.

4.5 Bureau Quality Assurance Representative

Within BER, the bureau QA representative (BQAR) is responsible for:

(1) serving as the advisor to the bureau director on matters related to QA/QC policies, principles and procedures;

(2) serving as the focal point for entities internal and external to the bureau on matters related to QA document reviews and QA/QC support services;

(3) maintaining a tracking system of document reviews and other QA activities performed(this will include maintaining an electronic and hard copies of the documents);

(4) representing the bureau's interests on the divisional quality assurance committee;

(5) maintaining communications with the divisional QA officer on matters related to QA/QC and relaying pertinent administrative decisions or developments to bureau staff;

(6) maintaining the bureau-level QA management plan, which contains all applicable generic program-level QA management plans and SOPs (this function includes analysis of QA evaluation reports and related information submitted by section chiefs and unit leaders and processing all SOPs for review and/or approval by the section chiefs and bureau QA representative);

(7) directly responsible for reviewing and approving QAPPs and SOPs administered by their respective bureau;

(8) provide guidance to program/project managers involved in the preparation and implementation of these documents; and

(9) operate under a degree of autonomy which allows them to make independent assessments of QA performance and the need for corrective action. They work with these supervisory staff and the divisional QA officer in the resolution of identified QA problems and concerns.

Section 5

INTERNAL QUALITY ASSURANCE REQUIREMENTS

5.1 Planning Documentation

The bureau performs numerous activities which involve the collection of environmental data. These include the collection of data by staff as well as by outside contractors. All activities performed by BER personnel or contractors which involve collection of environmental samples shall be carried out in accordance with the approved bureau-level QA management plan.

Depending on the sampling activity, a site-specific or generic quality assurance project plan (QAPP), which describes the objective of the sampling project, sampling design and procedures, analytical methods, QC requirements, and data assessment, shall be developed by the project or program manager. Reviews of the QAPPs are performed by the appropriate unit leader, section chief and bureau QA representative in accordance with SOPs which are designed to ensure uniform and consistent reviews. The Sampling and Analysis plans (SAP) are reviewed and approved by the project manager; however, these documents are commonly referred to as the workplan or QAPP where a site specific document is developed. The SAP must be approved prior to initiation of the field work. The entity responsible for sampling shall be required to develop a site-specific SAP including a field sampling plan (FSP). The review of such SAPs shall be the responsibility of the project manager and must be consistent with the overall goals and objectives of the divisional and bureau QA management plans.

The bureau QA management plan shall be periodically reviewed and revised by the bureau QA representative, with input and assistance from the section chiefs. Original plans and plans with major revisions must be approved by the bureau QA representative, bureau director, divisional QA officer and the division director. The QA management plan shall be prepared using a standardized document control format in which the report section number, revision number, date of revision, and page number appear in the upper right-hand corner of each page.

5.2 Requesting Analytical Services

Several approaches are employed by BER for the submission of environmental samples to a laboratory for analyses. Staff may submit environmental samples directly to the Kansas Health and Environmental Laboratory (KHEL) or contract the services of an outside laboratory.

The selected laboratory must have specific QAPPS and SOPs meeting the informational requirements of Part I section 4.1.1 and 4.1.2 of the QMP prior to utilization by the bureau. Generally, KHEL is used for a majority of the bureau's analytical needs. However, contractual arrangements with other laboratories provide additional analytical capacity and capabilities not provided by KHEL. These QMP requirements are met through the KHEL laboratory certification and any review deemed appropriate by the bureau QA representative.

5.3 Standard Operating Procedures

Standard operating procedures shall be prepared for all routinely used sampling, analytical and associated procedures as a means of establishing uniform written protocols for data collection and analytical processes and of integrating QC provisions into all routine activities. The sections within BER that routinely use specific procedures shall prepare SOPs for those procedures for inclusion in QAPPs and similar documents, and for guidance documents in training, technical assistance and similar actions. The SOPs shall be maintained by the bureau QA representative. Each SOP shall be reviewed and approved by the appropriate section chiefs and bureau QA representative. In order to ensure the manual is maintained in an up-to-date condition, BER will review all pertinent SOPs at least each year and revise these documents, as necessary.

5.4 Contractual Agreements

Outside entities engaged in environmental monitoring activities under contractual agreement with the bureau shall develop SAPs for programs operating under generic QAPPs consistent with the divisional and bureau QA management documents. These plans and SOPs must be approved by the program manager serving as technical advisor on the project prior to the initiation of data collection activities. Contracts, work plans and site specific QAPPs must contain provisions which ensure that the contractor will prepare and submit the final project report to the bureau within a prescribed time frame.

The QA documents associated with contractual monitoring activities must be maintained in an up-to-date condition. Minor changes in the work performed under a contract, workplan or QA management plan must be reviewed and approved by the appropriate program manager and supervising section chief prior to implementation. Substantive revisions or addendums to the original documents must be reviewed and approved in the same manner as the original documents.

5.5 Data Quality Management

All program-level QAPPs shall contain provisions which ensure the proper validation, transfer, storage and backup of environmental monitoring data. Data reporting procedures shall be specifically addressed within QAPPs and/or the accompanying SOPs. Where practicable, the plans shall provide mechanisms for reporting and documenting the quantitative precision and accuracy of the data. At a minimum, plans must contain provisions for reporting and documenting data completeness, representativeness and comparability in qualitative terms.

Computer-based mathematical, statistical, geographical and graphical programs and models involving environmental data shall be tested before application and periodically thereafter. The reliability of groundwater modeling software shall be tested by periodic comparison of the results to other groundwater modeling software, or through other appropriate means. This requirement has been waived by the bureau director for specific applications involving commercial software after review by the bureau director and bureau QA representative. Originals of these waivers shall be retained by the bureau QA representative with a copy forwarded to the divisional QA officer.

Section 6

QUALITY ASSURANCE PROGRAM EVALUATION

6.1 Internal Reviews and Evaluations

The QA/QC aspects of all environmental monitoring programs are subject to ongoing review by the program managers and section chiefs. Program managers are expected to cooperate fully with administrative requests for information on data precision/accuracy and overall QC performance. Section chiefs are expected to track the QC performance of program managers, assist managers in identifying QC deficiencies within their programs, and facilitate the initiation of necessary corrective actions. The results are reported to the bureau QA representative, bureau director, divisional QA officer and division director.

6.2 External Reviews and Evaluations

To enhance the quality and credibility of the environmental data gathered by the bureau, all monitoring programs may be required to participate in annual QA audits performed by an independent party, such as EPA. Audit findings, and corrective actions implemented in response to such findings, are reported to the bureau QA representative, bureau director, divisional QA officer and division director.

6.3 Staff/Supervisor Performance

Position descriptions and performance evaluations are expected to accurately reflect the QA/QC functions and performances of staff. All staff involved in environmental monitoring activities are expected to carry out their responsibilities under the bureau QA management plan to the best of their abilities. Administrative staff and program managers are expected to foster an appreciation for the role of QA/QC among non-supervisory employees. In turn, the opinions and insights of non-supervisory employees must be carefully considered by program managers and administrative staff. The quality and credibility of the bureau's environmental monitoring efforts ultimately depend on the willingness of all employees to work as a team, maintain consistent monitoring procedures, learn from their mistakes, and performing their duties in a diligent manner.

6.4 End - of - Year Program Review

End-of-year program evaluations shall be conducted by section chiefs and the results submitted, in writing, through the appropriate bureau QA representative to the bureau director and divisional QA officer by February 15 of the following year. These written evaluations shall indicate when, how, and by whom the evaluation was conducted and describe the specific aspects of the programs subjected to review. They shall include a summary of important findings and recommendations for any necessary corrective actions. Section chiefs shall discuss the findings of these evaluations with program/project managers and participating field, laboratory, and data management staff.

Section 7

FACILITIES, EQUIPMENT AND SERVICES

7.1 Facilities Operation and Maintenance

The building which BER currently occupies the Curtis State Office Building, located at 1000 SW Jackson in Topeka, Kansas.

7.2 Maintenance of Services

The maintenance of the general utilities and building services are handled by the Kansas Department of Administration, Facilities Management Division.

7.3 Maintenance of Equipment

All field equipment must be checked out by the individual user from the appropriate Sections' equipment and supply technician. The individual users of field equipment are responsible for the care (in accordance with manufacturer's procedural manuals and/or SOPs) of the equipment while being used in field operations. The user shall ensure the equipment is checked for proper operation and calibrated (if appropriate) prior to leaving for the field. The user must record any malfunctions encountered while in the field in the logbook associated with the equipment. The user shall inform the unit leader and the equipment and supply technician of such malfunctions upon return of the equipment to storage so that appropriate action can be initiated to repair the item of equipment, or initiate actions (e.g., prepare a purchase request or purchase acquisition) to get the equipment repaired upon return from the field.

7.4 Maintenance of Computer Equipment

The BER utilizes a variety of computer equipment including personal computers (PCs), dedicated computers connected to various databases and/or networks, printers, plotters, tape backup units, and modems. Maintenance of this hardware is the responsibility of BER and the computer supplier. Technical support for computer operations within BER is supplied by the KDHE Office of Information Systems. The computer network and various databases are housed on an IBM AS-400 operated and maintained by the Office of Information Systems.

7.5 Procurement of Supplies and Equipment

The procurement of supplies and equipment which relate directly to the process of collection and generating environmental data (e.g., analytical instruments, sampling containers) shall include consideration of any effect on data quality. When procuring instrumentation, actual performance criteria and special needs must be clearly defined upon initiation of the process. Although cost is certainly a major factor, the reliability, capabilities, maintainability, availability of service support, complexity, and durability of instrumentation are all important factors that should be considered in the selection process. These functions shall be coordinated by the bureau QA representative; however, most will be performed by the individual who determined the need for the supplies or equipment.

Section 8

QUALIFICATIONS, TRAINING AND RESOURCES

8.1 Qualifications

The Bureau of Environmental Remediation follows the policies, guidelines and regulations established by the Division of Personnel Services for hiring, evaluating and classifying personnel. These policies, guidelines and regulations establish various requirements for experience and education of personnel within the bureau.

8.2 Training

Supervisors, including program managers, shall ensure that all new employees (or recent transfers or cross-trainees from other programs) receive a thorough indoctrination into the QA policies and procedures of the division, bureau and program. Parts I, II and III of the QMP, including applicable program-level SOPs, shall be required reading on the part of all new employees. The bureau follows Article 8 of the Kansas Administrative Personnel Regulations, dealing with training and career development. Also, BER has program-specific training requirements for its employees. Each employee who participates in the collection and/or generation of environmental monitoring data is provided basic training regarding QA/QC immediately after being employed and before generating any data. New employees are normally paired with experienced employees for orientation and initial training. Additional training is provided as the employee's responsibilities increase. At no time is an employee asked to perform a duty for which his/her supervisor believes the employee has not had sufficient training and/or experience to complete the assignment satisfactorily.

The bureau also requires employees to attend a certified 40-hour personnel protection and training course and attend yearly eight-hour refresher courses. Personnel supervisors are required to attend a supervisory training course in accordance with Article 8 of the Kansas Administrative Personnel Regulations.

Bureau QA representatives are responsible for working with section chiefs and program/project managers to ensure that all staff implementing QAPPs and SOPs are familiar with their responsibilities under the QMP and have received an appropriate level of QA training. As training opportunities and agency resources allow, section chiefs and program/project managers are expected to complete the following (or equivalent) EPA training courses: *Orientation to Quality Assurance*, *Systematic Planning Process (Data Quality Objectives)*, *Quality Assurance Project Plans*, and *Standard Operating Procedures*. The divisional QA officer and bureau QA representatives are similarly expected to complete the above-mentioned courses and the following (or equivalent) EPA courses: *Quality Management Plans* and *Data Quality Assessments*. As resources and work priorities allow, other employees shall be encouraged to participate in QA training courses offered by EPA. Quality assurance training needs shall be addressed by section chiefs in the end-of-year program/project evaluation reports discussed in section 6.4, above.

8.3 Resources

Resources available to perform QA/QC functions and training shall be projected based on the availability of resources, staff workloads, program objectives, or as otherwise deemed necessary by the bureau director. Section chiefs are expected to address the training needs of staff on an annual basis. This information is integrated into the budget development process by the bureau director.

8.4 Affidavits

All DOE employees participating in environmental monitoring activities shall review Part I of the QMP and applicable portions of parts II and III of the QMP at least once each year. Upon completion of this review, each employee shall sign an affidavit indicating he/she has read the appropriate QA documentation. The signed affidavit shall be routed through the immediate supervisor and bureau QA representative to the divisional QA officer. This review requirement shall be incorporated into the employee's written job expectations and factored by the immediate supervisor into the employee's annual performance evaluation.

8.5 Continuing Education

Methods employed in the collection and analysis of environmental samples and environmental data are subject to continual review and improvement. Occasional conceptual or technological breakthroughs may rapidly antiquate existing procedures and protocols and require extensive training or retraining on the part of staff. Continuing educational courses offered by some colleges or vocational educational institutions may fulfill these training needs. Staff participating in such courses may be reimbursed by the division provided the course subject matter is within the general scope of the employee position description, funds for training have been set aside within the budget of the beneficiary program/project, requests for reimbursement have been approved prior to attending training, and participation is otherwise allowable under prevailing agency training and travel policies.

Section 9

SAFETY

Field and laboratory staff that participate in environmental monitoring programs encounter potentially hazardous situations on a frequent basis. In addition to the routine possibility of automobile or equipment accidents, employees may encounter extremely slippery surfaces, toxic or hazardous substances, infectious microorganisms, fire or electrocution hazards, vicious dogs, belligerent persons, or other threatening situations. Injuries or illnesses resulting from such situations may lead to substantial human suffering and, from a QA/QC perspective, deprive monitoring programs of the services of a valuable employee for an extended period of time.

Although it is not possible to predict every conceivable risk that may arise during the course of work, supervisors must ensure that those risks faced by staff on a recurring basis are addressed in the SOPs and are discussed during employee training.

Field and laboratory staff are expected to abide by the safety protocols contained within the QA management plans and SOPs and to integrate safety considerations into all aspects of their work. The Bureau of Environmental Remediation routinely budgets for ongoing safety training expenses and annual medical physicals for field staff associated with monitoring and/or field inspections of hazardous materials.

Non-supervisory employees are expected to bring potentially unsafe practices or situations to the attention of their program manager. In turn, the program manager shall evaluate the practice or situation and either take the appropriate corrective action or, in complicated circumstances, seek the advice of the appropriate section chief or higher level supervisor. Major corrective actions (those warranting changes in an SOP) shall be implemented by staff only upon approval of the section chief and bureau QA representative.